

Encrypted Self-Targeting Energy Beams for Power Transmission Designed for Satellite and Space Habitat Applications, Phase I

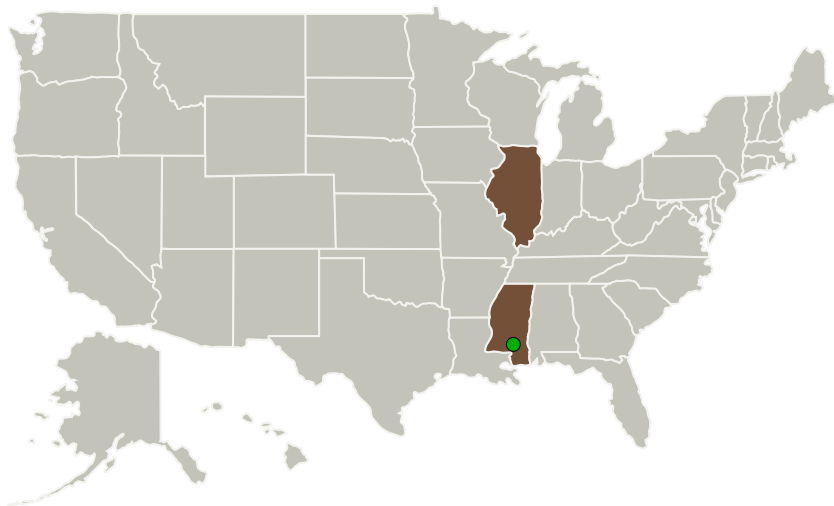
Completed Technology Project (2017 - 2018)



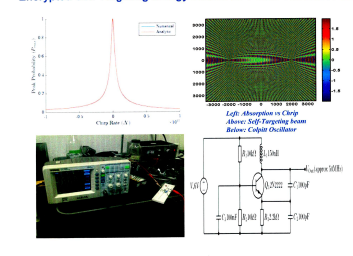
Project Introduction

The NASA has identified the need to increase availability of Power as a Top Technical Challenge. This STTR proposal suggests novel approaches for the wireless energy transmission for use by satellite, spacecraft in orbit, or by space habitats. NASA's planned earth orbiting spacecraft, planetary spacecraft, Cube Sats, Small Sats, balloons, aircraft, surface assets, and marine craft and UAVs as observation platforms can benefit from such successful wireless energy transmission technology. The advanced power transmission technology and receiving concepts proposed are based on the principles and system design for Aperiodic HF EM waves based power transfer, which are not absorbed by dense matter, including organic matter and water. The success in this STTR would enable and enhance the capabilities of NASA mission hardware and offer operational flexibilities with significant savings in the overall costs along with the weight savings due to reduction in needed harness weight.

Primary U.S. Work Locations and Key Partners



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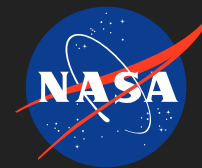
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Briefing Chart Image

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Organizations Performing Work	Role	Type	Location
Applied Material Systems Engineering, Inc. (AMSENG)	Lead Organization	Industry Small Disadvantaged Business (SDB)	Schaumburg, Illinois
Board of Trustees of the University of Illinois	Supporting Organization	Academia	Champaign, Illinois
● Stennis Space Center(SSC)	Supporting Organization	NASA Center	Stennis Space Center, Mississippi

Primary U.S. Work Locations

Illinois	Mississippi
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Project Transitions

▶ **June 2017:** Project Start

✓ **June 2018:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/140851>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Applied Material Systems Engineering, Inc. (AMSENG)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

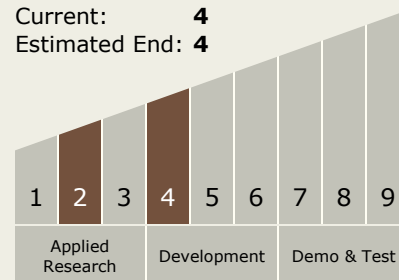
Carlos Torrez

Principal Investigator:

Alex Bezryadin

Technology Maturity (TRL)

Start: 2
Current: 4
Estimated End: 4

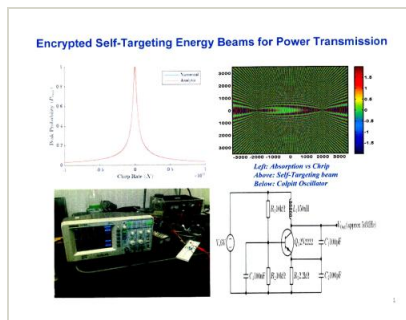


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Images



Briefing Chart Image

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(<https://techport.nasa.gov/image/132614>)

Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
 - └ TX03.1 Power Generation and Energy Conversion
 - └ TX03.1.4 Dynamic Energy Conversion

Target Destinations

Earth, The Moon, Others Inside the Solar System, Outside the Solar System, The Sun, Mars